Association for Information Systems
AIS Electronic Library (AISeL)

BLED 2015 Proceedings | BLED Proceedings

2015

Assessment Schema for Social CRM Tools: An Empirical Investigation

Torben Küpper
University of St. Gallen, Switzerland, torben.kuepper@unisg.ch

Alexander Wieneke
University of St. Gallen, Switzerland, alexander.wieneke@unisg.ch

Nicolas Wittkuhn
University of St.Gallen, Switzerland, nicolas.wittkuhn@student.unisg.ch

Tobias Lehmkuhl
University of St.Gallen, Switzerland, tobias.lehmkuhl@unisg.ch

Reinhard Jung
University of St.Gallen, Switzerland, reinhard.jung@unisg.ch

28th Bled eConference

#eWellBeing

June 7 - 10, 2015; Bled, Slovenia

Assessment Schema for Social CRM Tools: *An Empirical Investigation*

Torben Küpper
University of St.Gallen, Switzerland
torben.kuepper@unisg.ch

Alexander Wieneke
University of St.Gallen, Switzerland
alexander.wieneke@unisg.ch

Nicolas Wittkuhn
University of St.Gallen, Switzerland
nicolas.wittkuhn@student.unisg.ch

Tobias Lehmkuhl
University of St.Gallen, Switzerland
tobias.lehmkuhl@unisg.ch

Reinhard Jung
University of St.Gallen, Switzerland
reinhard.jung@unisg.ch

Abstract

This paper presents an assessment schema for Social CRM tools based on an empirical investigation. A constraining factor regarding the implementation of Social CRM tools (e.g., Engagor, Demand Media) is a lack of corresponding comparability of the different features (e.g., analysis of individual data, CRM interface). Little research has been conducted on the assessment of Social CRM tools, and even less have used empirical investigations to develop an assessment schema for surveying the use of corresponding technologies. To address this gap, the study reveals a quantitative investigation of Social CRM technology use as well as develops an assessment schema for Social CRM tools (i.e., including a Monitoring and Capturing, Analysis, Exploitation, Communication, IS integration and Management dimension). The data is analyzed using formative indicators with a sample of 122 marketing, communication and IT decision makers. The results of the analysis serve as weights for the assessment schema. It can be used to develop values for Social CRM tools with regard to their different 'use' features and dimensions.

Keywords: Social CRM tool, Social CRM tool assessment, assessment schema for Social CRM tools

1 Introduction

Social Media enables a new mode of communication and interaction between companies and their customers, which changes the existing approach to customer relationship management (CRM) (Baird and Parasnis 2013; Kumar and Reinartz 2012). Within CRM, companies have only one-directional communication (e.g., by e-mail) and gather information on existing customers. Due to multidirectional communication through Social Media, companies have additional access to public and private information (e.g., profiles, activities, interests etc.) of consumers (e.g., followers of a company's social media account) as well as customers' friends (Alt and Reinhold 2012). The integration of Social Media into CRM is a rising phenomenon, leading to a new scientific paradigm (Askool and Nakata 2011) and is referred to as Social Customer Relationship Management (Social CRM) (Lehmkuhl and Jung 2013). It is defined as "[…] a philosophy and a business strategy, supported by a technology platform, business rules, processes and social characteristics, designed to engage the customer in a collaborative conversation in order to provide mutually beneficial value in a trusted and transparent business environment" (Greenberg 2010). Gartner has identified Social CRM as one of the top innovation-triggered themes in the next five to seven years (Alvarez 2013).

The exploitation of customer information is "expected to positively contribute to the performance outcomes" (Trainor 2012) and possibly enhance the company's business success. One viable option for companies to achieve and analyze "the customers content on the companies' Social Media platforms …" (Küpper 2014) is the implementation of tools. Vendors like Lithium, Jive, Salesforce offer various tools (e.g., Hearsay Social, Radian6, Demand Media, Engagor) for Social CRM. However, research and practice have revealed problems in implementing Social CRM tools successfully. One possible reason is that companies are unable to assess these tools, i.e., they cannot match potential features of different tools to the company-specific requirements, and neither science nor practice are able to provide a useful assessment schema.

A literature review in 2014 by Küpper et al. (2014), focuses on the current state of knowledge for Social CRM technology features[1]. Previous works conceptualize individual features of Social CRM technologies (e.g., Alt and Reinhold, 2012; Reinhold and Alt, 2013; Woodcock et al., 2011) or evaluate the use of Social Media (Trainor et al. 2014). Yet, there is a lack of empirical investigation, because no article measures the use of features of a company's Social CRM tool (e.g., analysis of individual data, CRM interface) with formative indicators, thus hindering the development of a corresponding assessment schema. Given the novelty of the topic, the objective of the present study is to develop an assessment schema for Social CRM tools. The corresponding research questions (RQs) are as follows:

RQ 1: Which features are valuable for the investigation of Social CRM technology use?

[1] Social CRM technology is a superordinate term for Social CRM tools. An example: talking about Social CRM technology features means every feature of all Social CRM tools. By talking about Social CRM tool features, the authors mean the features of this individual Social CRM tool.

RQ 2: How can a Social CRM tool be assessed?

To achieve the stated objective, the study reveals (RQ 1) a quantitative investigation for Social CRM technology use and develops (RQ 2) an assessment schema for Social CRM tools. Accordingly, data from a survey sample of 122 marketing, communication and IT decision makers are analyzed through a confirmatory factor analysis, as in Diamantopoulos and Winklhofer (2001). The result shows that 18 features, classified into six dimensions, including *Monitoring and Capturing*, *Analysis*, *Exploitation*, *Communication*, *IS integration* and *Management* are valuable[2] for the investigation of Social CRM technologies use. An application of the developed assessment schema is exemplary used for the tool Engagor. Additionally, a comparison of two tools (Engagor and Demand Media) highlights the practical implications of the study (i.e., illustrated on a dashboard application).

The remainder of the paper is structured as follows. Section 2 presents the conceptual background and explains the different features of Social CRM technology. Afterwards, the research design is described. Section 4 contains the findings from the evaluation and highlights the assessment schema. The practical implication (i.e., dashboard application) is illustrated in section 5. Finally, the paper concludes, covers the limitations, and outlines further research approaches.

2 Conceptual Background

In order to evaluate the use of Social CRM technologies, the conceptual background focuses on previous evaluation of use constructs. It highlights a definition within the Social CRM context and concludes with a list of 18 Social CRM technology features, which serve as the basis for further investigations.

Information technology use and information systems (IS) use are widely and vividly discussed topics in the discipline of IS research. For example, Bhattacherjee (2001) and Bhattacherjee et al. (2008) focus on the construct "information technology continuance intention". Venkatesh et al. (2003) discuss the "user acceptance of IT" including the construct "use behavior". Additionally, Venkatesh et al. (2008) focus on the construct "system use" (i.e., measured by duration, frequency, and intensity). According to Petter et al. (2007), all recommended constructs are measured with reflective indicators. Due to the specific research topic (Social CRM) and the formative measurement in this study, the CRM and the Social Media literature additionally need to be considered. Within the CRM as well as Social Media context, information technology use is a central component, and also measured by a single reflective construct. An abstract overview of IS, CRM and Social Media literature regarding the use constructs is presented in Table 1. Only Zablah et al. (2012) develop and evaluate formative indicators and corresponding constructs for CRM technology use, which serve as a theoretical framing for the study. CRM technology is understood as the automation of internal (e.g., among employees like Sales-, Marketing people etc.) and external information processing (e.g., communication with consumers through IT such as e-mail, supported by systems for customer analytics). Therefore, CRM technology is defined as "the degree to which firms use supporting information technology to manage customer relationships" (Reinartz, Krafft, and Hoyer 2004). Due to the lack of a Social CRM

[2] "Valuable" means that the results are based on a quantitative evaluation (i.e., showing significant coefficients).

technology use definition in the literature, the authors of this study adopt a previous definition for CRM within the Social CRM context. Thus, Social CRM technology use is defined as the degree to which Social CRM technology features are being utilized to support organizational work.

References	**Level of Analysis**		**Typ of Construct**		**Investigation of the "Use" Construct**			
	Ind.	**Org.**	**Refl.**	**Form.**	**IS**	**CRM**	**SM**	**Social CRM**
Bhattacherjee, 2001	x		x		x			
Bhattacherjee et al., 2008	x		x		x			
Venkatesh et al., 2003	x		x		x			
Venkatesh et al., 2008	x		x		x			
Jayachandran et al., 2005		x	x			x		
Chang et al., 2010		x	x			x		
Zablah et al., 2012		x		x		x		
Trainor et al., 2014		x	x				x	
Abdul-Muhmin, 2012		x	x			x		
Rodriguez et al., 2012		x	x				x	
Sum	4	6	9	1	4	4	2	0
This study		**x**		**x**				**x**
Ind. = Individual; Org. = Organizational; Refl. = Reflective; Form. = Formative; SM = Social Media								

Table 1: Overview of the literature

According to Zablah et al. (2012), a necessary first step in assessing the degree of a company's Social CRM technology use is to identify corresponding Social CRM technology features. Therefore, a previous explorative qualitative investigation conceptualizes and validates the current literature and consists of two steps (Wang, Sedera, and Tan 2009). First, a literature review was conducted to identify preliminary Social CRM technology features, based on conceptual arguments. Second, a market study revealed the practitioner perspective through an investigation of current tools from different vendors. The analysis of academic publications highlighted 16 Social CRM technology features. The market study (with a total number of 40 investigated vendors) resulted in (1) the validation of 16 identified Social CRM technology features found in the literature and (2) the identification of two additional features. Thus, a total of 18 Social CRM technology features were identified (Küpper et al. 2014). Subsequently, they were categorized into six dimensions. Table 2 presents the previous findings (the dimensions and features) and illustrating examples.

Social CRM technology dimensions	Descriptions	Social CRM technology features (sub-dimensions)	Examples	ID
Monitoring and Capturing	It describes the real time data observation on social media (e.g., with in-memory technologies) and the collection of different social media data (e.g., with batch processing).	Real time data monitoring	Identify content through system keywords algorithm	CA1
		Capturing aggregate data	About consumers, competitors etc.	CA2
		Capturing individual data	About a single consumer, a new product release, etc.	CA3
Analysis	"Analysis" describes the assessment, segmentation and/or analysis of the monitored and captured social media data.	Analysis of content (real time)	Recognition of consumers questions	AN1
		Analysis of aggregate data	Customer analysis, brand feedback etc.	AN2
		Analysis of individual data	Personal behavior, etc.	AN3
Exploitation	"Exploitation" describes different activities, which are executed especially after the analysis phase.	Predictive modelling	Forecast consumer behavior, new trends	EX1
		Interconnected consumer network map	Social Graphs etc.	EX2
		Sales activities	Advertising campaigns, etc.	EX3
		Reporting	Summary statements on sales, activities, reports etc.	EX4
IS Integration	"IS Integration" describes transmission and integration functions with other information systems in the company (e.g., other IT-tools).	CRM interface	Integration of existing CRM systems	IN1
		Information Systems interface	Interface with other IS, integration of other tools	IN2
Communi-cation	"Communication" describes different types of external (B2C) and internal communication.	Communication with a single consumer	Solving a single consumer issue, etc.	CO1
		Communication with a group of consumers	Newsletter, etc.	CO2
		Communication with employees	Cross-functional communication	CO3
Manage-ment	"Management" describes the support and/or coordination of companywide management functions (e.g., moderation, process management).	Community management	Management of social media accounts etc.	MA1
		User permission management	Allocation of employees' access system rights	MA2
		Engagement management	Applying engagement features like gamification etc.	MA3

Table 2: Dimensions for Social CRM technology use

3 Methodology

3.1 Research Approach

The overall research project is conducted in a three-stage multi-method approach and depicted in Figure 1. The research design aims at developing an assessment schema for Social CRM tools. It comprises (1) an explorative qualitative part (see Section 2), (2) a confirmatory quantitative part, and (3) a practical implication part. Accordingly, the paper focuses on the second and third part of the overall research project. First,

indicators of Social CRM technology use are developed. Second, the data collection (through a survey) allows the analysis and the validation of the instruments through a confirmatory factor analysis. Next, the assessment schema is developed based on the results of the data analysis. Finally, the assessment schema is applied within a tool, in order to reveal the practical application of the study.

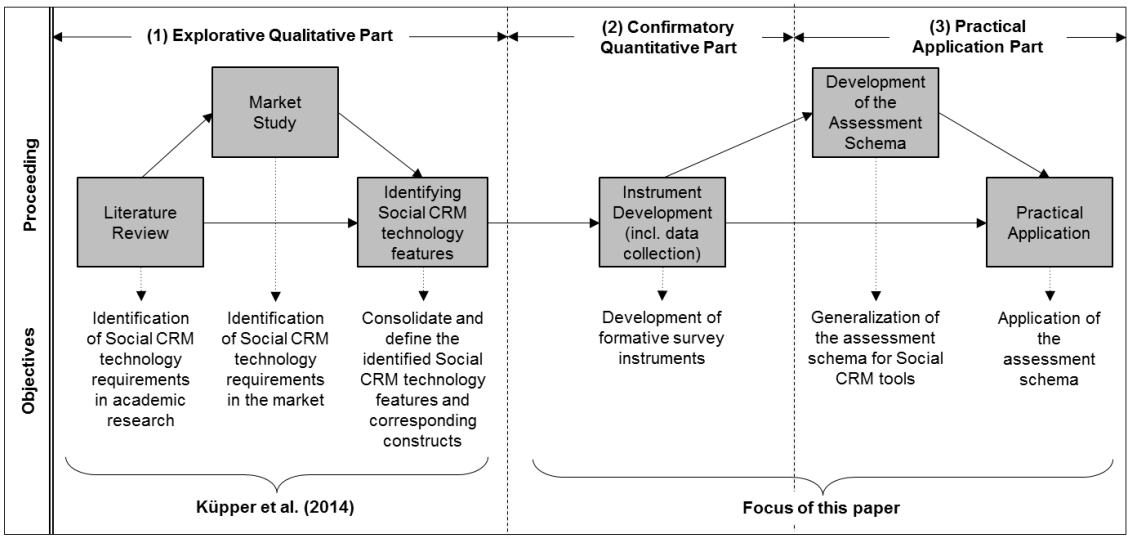

Figure 1: Overview of the research approach

3.2 Instrument Development

The process of developing instruments (i.e. indicators) is conducted in a three stage approach (I. item creation, II. scale development and III. indicator testing), including six sub-stages in total, as proposed by Moore and Benbasat (1991), which is depicted in Figure 2 (cf. Walther et al., 2013). The first sub-stage "Conceptualization Content Specification" focuses on a literature review in order to identify context-specific constructs (dimensions) and corresponding sub-dimensions (i.e., features, see Table 2). Second, based on the results, items are deduced to operationalize the previous constructs. Third, a Q-sorting procedure assesses the "Access Content Validity" with the calculation of an inter-rater reliability index (or related indexes, e.g., Cronbach's Alpha). Within the next two sub-stages ("Pretest and Refinement" and "Field Test"), the questionnaire is tested in order to obtain some initial feedback, for instance on problematic areas. Especially for the unique characteristics of formative indicators and the corresponding constructs, the last sub-stage is based on the first four steps of the formative measurement from Cenfetelli and Bassellier (2009). The applied confirmatory factor analysis is designed according to Diamantopoulos and Winklhofer (2001), and focuses on a statistical evaluation of formative indicators and corresponding constructs.

The final survey is distributed over several Social Media channels (e.g., Xing, LinkedIn, Twitter), focusing on marketing, communication, and IT decision makers. The indicators are measured using a 7-point Likert scale from the agreement-level "strongly disagree" (1) to "strongly agree" (7).

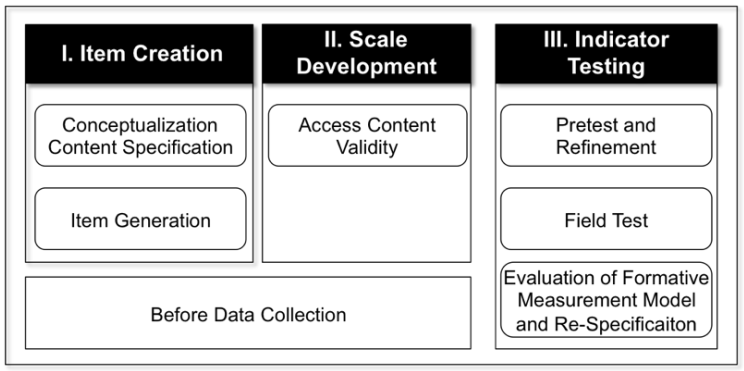

Figure 2: Process of developing instruments

3.3 Development and Practical Application of the Assessment Schema

Based on the quantitative analysis (i.e., the confirmatory factor analysis), the estimated values, for each dimension of the Social CRM technology features, serve as the weights for the assessment schema. The practical application with a tool follows in three steps. First, the tool was downloaded and intensively studied. If the tool covers one of the 18 identified and validated Social CRM technology features, it was coded with 1 otherwise it was stated with 0. Second, each feature was quantified, i.e., coding (1 or 0) multiplied with the value of the path coefficient and the corresponding weight. Finally, the sum is taken into account and serves as the assessment of the corresponding tool.

4 Results

4.1 Instrument Development

In total, a dataset of 122 answers was captured and serves as the basis for the analysis. Some statistics of the data are presented in Table 3.

Industry	Per-cent	# of Employees	Per-cent	Position in Company	Per-cent
Manufacturing & Utility	31.1%	< 10	16.4%	Executives	31.1%
Others	18.0%	10 – 49	17.2%	Team Manager	18.9%
Information & Communication	14.8%	50 – 499	28.7%	Specialized Manager	17.2%
Finance & Insurance	13.9%	500 – 999	9.8%	Department Manager	15.5%
Public Administration & Logistics	11.5%	1000 – 5000	16.4%	Division Manager	14.8%
Health Industry	10.7%	> 5000	11.5%	Others	2.5%

Table 3: Descriptive sample statistic

In order to develop and evaluate formative indicators and the corresponding constructs for Social CRM technology use, the first four steps from Cenfetelli and Bassellier (2009) are applied, which contains a confirmatory factor analysis, according to Diamantopoulos and Winklhofer (2001), as mentioned above. Using the PLS (partial least square) method to analyze the data, SmartPLS and SPSS are the appropriate tools (Hair et al. 2013). The four steps, as recommended by Cenfetelli and Bassellier (2009), include the investigation of: (1) multicollinearity testing, (2) the effect of the number of indicators and non-significant weights, (3) co-occurrence of negative and positive indicator weights, and (4) absolute versus relative indicator contributions.

The appendix provides an overview of the test statistics. For the first step (multicollinearity testing), the variance inflation factors (VIFs) are calculated using SPSS. All VIFs are below the maximum threshold of 5.0, recommended by Hair et al.

(2011) and Walther et al. (2013). The results reveal that multicollinearity is not an issue in this study. Steps two to four are based on calculated values and test statistics using SmartPLS[3]. The second step (the effect of the number of indicators and non-significant weights) deals with the problem that a large number of indicators cause non-significant weights. The results show that indicator MA2 (*Management* construct) is not significant, which has to be considered in the following steps. Cenfetelli and Bassellier (2009) also state that this should not be misinterpreted concerning any irrelevance of the indicators. The only interpretation of this issue is that some indicators have a lower influence than others. In order to gain a deeper understanding, this study continues with step three (co-occurrence of negative and positive indicators weights). No indicator has negative weights; therefore this is not an issue in the study.

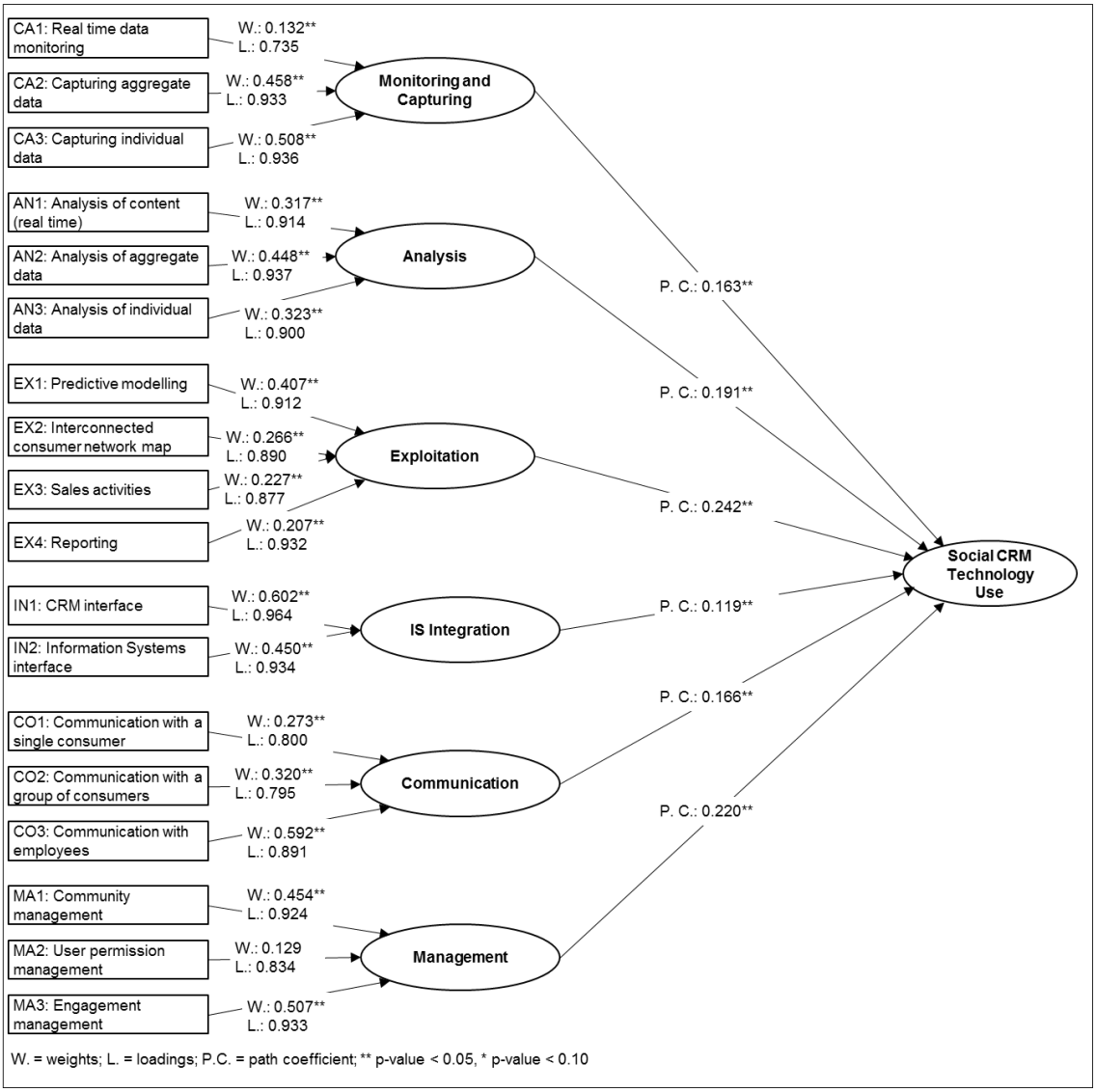

Figure 3: Illustrating formative indicators and the corresponding constructs

Step four (absolute versus relative indicator contributions) needs to be conducted by reporting the respective loadings. The loadings indicate that an "indicator could have only a small formative impact on the construct (shown by a low weight), but it still

[3] With parameter settings using 110 cases and 3000 samples.

could be an important part of the construct (shown by a high loading)" (Söllner et al. 2012). Concerning the issues with MA2, which show non-significant, but very high loadings, no further improvements (i.e., dropping indicator) have to be performed (Cenfetelli and Bassellier 2009; Hair, Ringle, and Sarstedt 2011; Hair et al. 2013). To conclude, all formative indicators and corresponding constructs are suitable for evaluating Social CRM technology use. The corresponding path coefficients for Social CRM technology use are illustrated in Figure 3.

To answer RQ 1 (*Which features are valuable for the investigation of Social CRM technology use?*), it can be stated that 18 features are valuable for the investigation of Social CRM technology use and serve the basis for developing the assessment schema for Social CRM tools.

4.2 Development of the Assessment Schema

The estimated path coefficients and the weights for each indicator are reliable and robust values for the assessment schema. The assessment schema, which is the answer of RQ 2 (*How can a Social CRM tool be assessed?*), is presented in Table 4. The assessment schema has two different dimensions of values (i.e., value of a construct, and value of the indicator weight), which are calculated as follows[4]. First, the six constructs have to be compared. Therefore, the value for, e.g., *Monitoring and Capturing* is calculated with 0.163/(0.163 + 0.191 + 0.242 + 0.119 + 0.166 + 0.220) + 1 = 1.146. Second, the value of the indicator weight is constraint to their corresponding construct, e.g., CA1 = 0.132/(0.132 + 0.458 + 0.508) + 1 = 1.12. The non-significant indicator (MA2) is measured with 1. The "coding" column needs to be filled out for a specific tool (see section 4.3). "Quantification" is the product of the three columns and will be calculated as: CA1 = 1.146 x 1.23 x "coding" column.

Dimensions (constructs)	Features	Value of the construct	Value of the indicator weights (features)	Coding	Quantification
Monitoring and Capturing	CA1	1.146	1.12		
	CA2		1.42		
	CA3		1.46		
Analysis	AN1	1.171	1.29		
	AN2		1.41		
	AN3		1.30		
Exploitation	EX1	1.217	1.37		
	EX2		1.24		
	EX3		1.21		
	EX4		1.19		
IS Integration	IN1	1.107	1.57		
	IN2		1.43		
Communication	CO1	1.149	1.23		
	CO2		1.27		
	CO3		1.50		
Management	MA1	1.211	1.42		
	MA2		1.00		
	MA3		1.47		
Sum (value of the tool)					

Table 4: Assessment Schema

4 In general, all values are described in percentage and added with 1.

4.3 Practical Application of the Assessment Schema

For the practical application the tool Engagor is investigated for three reasons. First, a download version is available, which enables the researcher to work with the tool. Second, a trainee introduces the researchers, in order to learn all of the corresponding features. Third, two cooperate companies are using Engagor for their current Social CRM activities, which capture detailed insights from practice. Table 5 presents the applied assessment schema for Engagor.

Dimensions (constructs)	Features	Value of the construct	Value of the indicator weights (features)	Coding	Quantification
Monitoring and Capturing	CA1	1.146	1.12	1	1.28
	CA2		1.42	1	1.62
	CA3		1.46	0	0.00
Analysis	AN1	1.171	1.29	1	1.51
	AN2		1.41	1	1.65
	AN3		1.30	0	0.00
Exploitation	EX1	1.217	1.37	0	0.00
	EX2		1.24	0	0.00
	EX3		1.21	0	0.00
	EX4		1.19	1	1.44
IS Integration	IN1	1.107	1.57	1	1.74
	IN2		1.43	0	0.00
Communication	CO1	1.149	1.23	1	1.41
	CO2		1.27	1	1.46
	CO3		1.50	1	1.72
Management	MA1	1.211	1.42	0	0.00
	MA2		1.00	1	1.21
	MA3		1.47	0	0.00
Sum (value of the tool)					**15.06**

Table 5: Application of the Assessment Schema.

5 Practical Implication

Companies can use the assessment schema to compare different tools for their specific needs. To illustrate the affordance and the practicability with another tool, Demand Media is analyzed with the assessment schema. Demand Media achieves a total value of 14.33, which is very similar to the tool Engagor, as calculated before. However, the values of both tools are distributed differently for the features and dimensions, as shown by the dashboard in Figure 4.

With the assessment schema a company is able to calculate the value of several tools and illustrate them on a dashboard. It is possible to optimize the number of relevant tools, which have a high value for more than one dimension. This is highly relevant for practice, which can be explained by three practical implications. First, the illustrative dashboard presents an overview of the best value for money. For example, if a company is looking for a tool with monitoring and capturing features, it can compare the dimensional values of each tool and compare the respective licensing costs (e.g., choosing a tool with a lower total value, but avoiding high licensing costs). Second, the dashboard application illustrates the implemented feature allocation. If a company needs a tool covering all dimensions, it would probably choose Engagor over Demand Media, as this tool does not perform well with regard to the IS integration dimension. Finally, the dashboard application is useful for optimizing a toolset, i.e., combining more than one tool to cover ‘weak spots’.

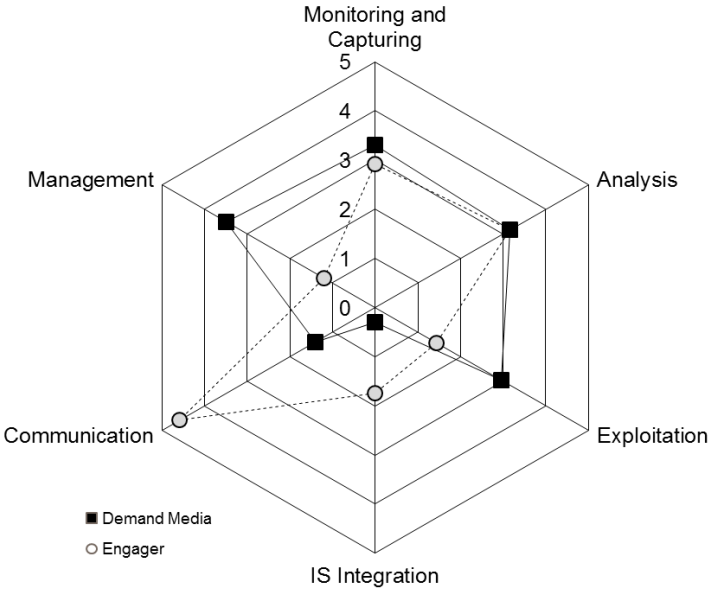

Figure 4: Illustrative dashboard application for tools evaluation

6 Conclusion, Limitations and further Research

The study develops an assessment schema for Social CRM tools. The quantitative research approach follows the research procedure of Moore and Benbasat (1991) and particularly the first four steps from Cenfetelli and Bassellier (2009). Accordingly, a sample of n=122 responses is investigated and analyzed, surveying marketing, communication and IT decision makers. In order to answer the RQs, the study makes two major contributions. First, the constructs of *Monitoring and Capturing, Analysis, Exploitation, Communication, IS integration* and *Management* are valuable dimensions of Social CRM technology use. Second, the assessment schema for Social CRM tools is robust and a useful management vehicle, representing the practical impact on the research results.

Two potential limitations constrain the results of this research. First, despite the highly significant values of the final formative indicators (i.e., the statistical test values), there may be missing indicators, which should be included in the model. Second, the study applied only the first four steps of the formative measurement from Cenfetelli and Bassellier (2009), which could have an effect on the results.

One promising approach for further research is the use of the assessment schema in practice, in order to find weaknesses and strength. Two possible improvements are stated: First, the 'coding-values' of the assessment schema can be described in detail (e.g., instead of 0 and 1, a five point scale is also possible). Second, it could be interesting to add an additional factor (e.g., a prioritization value, which indicates the company's current needs). A further scientific research approach could be an investigation of a redundancy analysis for the six constructs, in order to identify higher order constructs and/or evaluate the formative indicators with reflective indicators (i.e., benchmark measuring). Therefore, the rigorously and systematically derived results presented by the study form a basis for further research projects.

References

Abdul-Muhmin, Alhassan G. (2012), "CRM technology use and implementation benefits in an emerging market," *Journal of Database Marketing & Customer Strategy Management*, 19 (2), 82–97.

Alt, Rainer and Olaf Reinhold (2012), "Social Customer Relationship Management (Social CRM) - Application and Technology," *Business & Information Systems Engineering*, 54 (5), 287–291.

Alvarez, Gene (2013), "Hype Cycle for E-Commerce 2013," Gartner, Inc.

Askool, Sanaa and Keiichi Nakata (2011), "A conceptual model for acceptance of social CRM systems based on a scoping study," *AI & SOCIETY*, 26 (3), 205–220.

Baird, Carolyn Heller and Gautam Parasnis (2013), "From social media to Social CRM - What customers want," IBM Global Business Services.

Bhattacherjee, Anol (2001), "Understanding Information Systems Continuance: An Expectation-Confirmation Model," *MIS Quarterly*, 25 (3), 351–370.

———, Johan Perols, and Clive Sanford (2008), "Information Technology Continuance: A Theoretic Extension and Empirical Test," *Journal of Computer Information Systems*, 49 (1), 17–26.

Cenfetelli, Ronald T. and Geneviève Bassellier (2009), "Interpretation of Formative Measurement in Information Systems Research," *MIS Quarterly*, 33 (4), 689–707.

Chang, Woojung, Jeong Eun Park, and Seoil Chaiy (2010), "How does CRM technology transform into organizational performance? A mediating role of marketing capability," *Journal of Business Research*, 63 (8), 849–855.

Diamantopoulos, Adamantios and Heidi M. Winklhofer (2001), "Index Construction with Formative Indicators: An Alternative to Scale Development," *Journal of Marketing Research*, 38 (2), 269–277.

Greenberg, Paul (2010), "The impact of CRM 2.0 on customer insight," *Journal of Business & Industrial Marketing*, 25 (6), 410–419.

Hair, Joseph F., G. Tomas M. Hult, Christian M. Ringle, and Marko Sarstedt (2013), *A Primer on Partial Least Squares Strucutral Equation Modeling (PLS-SEM)*, Thousand Oaks: SAGE Publications, Inc.

———, Christian M. Ringle, and Marko Sarstedt (2011), "PLS-SEM: Indeed a Silver Bullet," *Journal of Marketing Theory and Practice*, 19 (2), 139–152.

Jayachandran, Satish, Subhash Sharma, Peter Kaufman, and Pushkala Raman (2005), "The Role of Relational Information Processes and Technology Use in Customer Relationship Management," *Journal of Marketing*, 69 (4), 177–192.

Kumar, V. and W. Reinartz (2012), *Customer Relationship Management*, Berlin, Heidelberg: Springer-Verlag.

Küpper, Torben (2014), "Measuring the Success of Social CRM - First Approach and Future Research," in *Proceedings of the 16th International Conference on Enterprise Information Systems*, Lisbon, Portugal, 573–582.

———, Tobias Lehmkuhl, Reinhard Jung, and Alexander Wieneke (2014), "Features for Social CRM Technology - An Organizational Perspective," in *Proceedings of the 20th Americas Conference on Information Systems*, Savannah, USA, 1–10.

Lehmkuhl, Tobias and Reinhard Jung (2013), "Towards Social CRM - Scoping the Concept and Guiding Research," in *Proceedings of the 26th Bled eConference*, Bled, Slovenia, 190–205.

Moore, Gary C. and Izak Benbasat (1991), "Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation," *Information Systems Research*, 2 (3), 192–222.

Petter, Stacie, Detmar Straub, and Arun Rai (2007), "Specifying Formative Constructs in Information Systems Research," *MIS Quarterly*, 31 (4), 623–656.

Reinartz, Werner, Manfred Krafft, and Wayne D. Hoyer (2004), "The Customer Relationship Management Process: Its Measurement and Impact on Performance," *Journal of Marketing Research*, 41 (3), 293–305.

Reinhold, Olaf and Rainer Alt (2013), "How Companies are Implementing Social Customer Relationship Management: Insights From Two Case Studies," in *Proceedings of the 26th Bled eConference*, Bled, Slovenia, 206–221.

Rodriguez, Michael, Robert M. Peterson, and Vijaykumar Krishnan (2012), "Social Media's Influence on Business-to-Business Sales Performance," *Journal of Personal Selling and Sales Management*, 32 (3), 365–378.

Söllner, Matthias, Axel Hoffmann, Holger Hoffmann, Arno Wacker, and Jan Marco Leimeister (2012), "Understanding the Formation of Trust in IT Artefacts," in *Proceedings of the 33rd International Conference on Information Systems*, Orlando, USA, 1–18.

Trainor, Kevin J. (2012), "Relating Social Media Technologies to Performance: A Capabilities-Based Perspective," *Journal of Personal Selling & Sales Management*, 32 (3), 317–331.

———, James Andzulis, Adam Rapp, and Raj Agnihotri (2014), "Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM," *Journal of Business Research*, 67 (6), 1201–1208.

Venkatesh, Viswanath, Susan A. Brown, Likoebe M. Maruping, and Hillol Bala (2008), "Predicting Different Conceptualizations of System Use: The Competing Roles of Behavioral Intention, Facilitating Conditions, and Behavioral Expectation," *MIS Quarterly*, 32 (3), 483–502.

———, Michael G. Morris, Gordon B. Davis, and Fred D. Davis (2003), "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly*, 27 (3), 425–478.

Walther, Sebastian, Darshana Sedera, Saonee Sarker, and Torsten Eymann (2013), "Evaluating Operational Cloud Enterprise Systems Success: An Organizational Perspective," in *Proceedings of the 21st European Conference on Information Systems*, Utrecht, Netherlands, 1–12.

Wang, Wenjuan, Darshana Sedera, and Felix Tan (2009), "Measuring CRM and SCM Benefits: A Preliminary Measurement Model," in *Proceedings of the 13th Pacific Asia Conference on Information Systems*, Hyderabad, India, 1–12.

Woodcock, Neil, Nick Broomfield, Geoff Downer, and M. Starkey (2011), "The evolving data architecture of social customer relationship management," *Journal of Direct, Data and Digital Marketing Practice*, 12 (3), 249–266.

Zablah, Alex R., Danny N. Bellenger, Detmar W. Straub, and Wesley J. Johnston (2012), "Performance Implications of CRM Technology Use: A Multilevel Field Study of Business Customers and Their Providers in the Telecommunications Industry," *Information Systems Research*, 23 (2), 418–435.

Appendix

Formative Indicators		**VIF**	**Weights**	**p-value**	**Load**
The company utilizes a tool to …					
Monitoring and Capturing					
CA1**	search different type of content (e.g., posts, tweets, etc.) on social media platforms in real time.	1.846	0.132	0.016	0.735
CA2**	collect and store unstructured social media information about the company, product, etc. on their social media platform(s).	2.385	0.458	< 0.01	0.933
CA3**	collect and store unstructured information about a single artifact (e.g., consumer, a single event, etc.) on their social media platform(s).	1.540	0.508	< 0.01	0.936
Analysis					
AN1**	analyze and assess different types of content in real time.	2.577	0.317	< 0.01	0.914
AN2**	analyze unstructured social media data across various criteria (e.g., consumer segmentation, etc.) in order to identify general trends, profitable consumers, etc.	2.299	0.448	< 0.01	0.937
AN3**	analyze unstructured data for a single consumer (e.g., a high potential influencer) across the one (or more) social media platforms in order to understand their social behavior, motivations, etc.	2.300	0.323	< 0.01	0.900
Exploitation					
EX1**	forecast consumer behavior, and trends etc. and enhance the predictive model.	3.519	0.407	< 0.01	0.912
EX2*	create a network map of consumers and the relationships between them.	3.207	0.266	< 0.01	0.890
EX3**	support product purchase, increase sales, cross- and upselling (e.g., social advertising campaigns).	2.477	0.227	< 0.01	0.877
EX4**	prepare summary statements, evaluate user activity and their loyalty, and/or prepare management reports.	4.341	0.207	0.032	0.932
IS Integration					
IN1**	integrate the social media data with an existing CRM system.	1.000	0.602	< 0.01	0.964
IN2**	integrate other information systems, sales processes and existing technologies, and other tools along the project lifecycle (exclude a CRM system).	1.000	0.450	< 0.01	0.934
Communication					
CO1**	interact personally, one-to-one communication, with a single consume.	1.937	0.273	0.027	0.800
CO2**	communicate with an entire community and/or multiple consumers.	1.369	0.320	0.022	0.795
CO3**	communicate with other employees throughout the organization.	1.402	0.592	< 0.01	0.891
Management					
MA1**	manage their social media accounts, communities and forums, such as moderation, internal process management, etc.	2.377	0.454	< 0.01	0.924
MA2	allocate employee access rights.	2.104	0.129	0.103	0.834
MA3**	apply different engagement features (e.g., gamification etc.).	2.230	0.507	< 0.01	0.933

VIF = Variance Inflation Factor; Load. = Loadings; ** p-value < 0.05; * p-value < 0.10